Section 13

ASSESSMENT OF GULF OF ALASKA ATKA MACKEREL (Executive Summary)

by

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Introduction

A formal assessment of Gulf of Alaska Atka mackerel was not conducted in 2004. Therefore, there are no changes to report for *Input Data, Assessment Methodology,* or *Assessment Results.* An executive summary is presented in lieu of a full assessment.

Summary of major changes

The 2004 Gulfwide Atka mackerel catch (current through 10/30/04) is 817 mt, which exceeded the TAC (600 mt) for Atka mackerel for the first time since this quota was implemented in 1998. The catch of GOA Atka mackerel jumped dramatically in 2003 to 578 mt. Previous to this, catches were less than 100 mt in 2001 and 2002. This coincided with local sports fishermen reporting catches of Atka mackerel for the first time off Resurrection Bay and as far as Southeast Alaska in 2003. Two strong back-to-back year classes (1998 & 1999) have shown up prominently in the Aleutian Islands (Lowe et al. 2004). The 2003 GOA survey age data were dominated by 4-year olds from the 1999 year class (63%), followed by significant numbers of 5-year olds from the 1998 year class (20%) (Lowe and Lauth 2003). Twenty seven Atka mackerel were sampled for otoliths by observers in the 2003 Gulf of Alaska fisheries. All 27 fish were aged and determined to be 4-year olds of the 1999 year class.

Last year's assessment showed the 2003 distribution of observed catches of Atka mackerel in the Gulf of Alaska, summed by 20 km areas (Figure 13.1, Lowe and Lauth 2003). Most of these catches occurred during July through October. Large catches were observed in Unimak Pass, and in the Shumagin and Chirikof areas. Many of these large catches were retained. It is apparent that in 2003 and 2004, fishermen were encountering large enough quantities to allow for some targeting of Atka mackerel. It is important to reiterate that recent increased observations of Atka mackerel in the Gulf of Alaska are largely comprised of a single cohort (1999 year class), and do not appear to indicate an expanded population with a broad distribution of age classes. Prudent management is still warranted and rationale as given in the past for a TAC to provide for anticipated bycatch needs of other fisheries, principally for Pacific cod, rockfish and pollock, and to only allow for minimal targeting should still be considered.

Cohort biomass is estimated to peak at age 4 for Aleutian Islands Atka mackerel given the natural mortality rate and recent levels of fishing mortality (Lowe et al. 2004). The 1999 year class represents a significant proportion of the current GOA catches and will be 6 years old by 2005. There does not appear to be another year class following the appearance of the 1999 year class in the Gulf of Alaska.

- Using Tier 6 criteria, the overfishing level is set equal to the average catch from 1978-95, which equals 6,200 mt.
- The 2004 Gulfwide ABC and TAC for Atka mackerel was 600 mt.

We recommend a roll-over of the 2004 Gulfwide ABC (600 mt) and OFL (6,200 mt) for 2005 and 2006.

Response to comments by the Scientific and Statistical Committee (SSC)

From the December 2003 minutes: "*Variation in distribution or productivity of a species at the periphery of its range has different management implications than variation of a similar magnitude at the center of the range. At the periphery of a species range, small variations in the natural environment may exceed the tolerance of the species and cause large rapid changes in local population size and distribution. In contrast, changes of similar magnitude in the center of the species range may be within the limits of tolerance of the species and therefore may result in little or no change in productivity. Recognizing the above relationships, the SSC recommends that, where possible, the assessment teams differentiate stocks or portions of stocks at the periphery of their ranges.*

In the case of Atka mackerel in the Gulf of Alaska, it is not known if the stock is at the periphery of the BSAI stock or a stock in its own right. Consequently, the assessment scientists and GOA Plan Team have developed a conservative approach in which the ABC is set at 600 t to provide for unavoidable bycatch. This level is far below the maximum permissible level of 4,700 t, from a Tier 6 calculation of 75% of average catch between 1978 – 1995. The OFL is that average catch of 6,200 t. The SSC concurs with this approach. Nevertheless, there should be research efforts to determine whether GOA Atka mackerel is the same stock as BSAI Atka mackerel. Whether this is true or not, an alternative assessment strategy should be evaluated, in which the combined GOA and BSAI is assessed and then partitioned into components, similar to the way assessment is done for sablefish. There are obvious difficulties with this approach, because it has not been possible to estimate GOA biomass from the bottom trawl survey. Nevertheless, it may be possible to develop an expansion factor for the combined stock from the data in the two areas."

The assessment authors agree with the first paragraph of the SSC comments above, and note the assessment, for the past several years has highlighted these considerations with respect to GOA Atka mackerel. We also agree with the need for research efforts to determine whether GOA Atka mackerel are the same stock as BSAI Atka mackerel. Results from a genetics study comparing Atka mackerel samples from the western Gulf of Alaska with samples from the eastern, central, and western Aleutian Islands showed no evidence of discrete stocks (Lowe et al. 1998). Analyses are currently underway using microsatellite DNA to evaluate genetic structuring of Atka mackerel.

Given the absence of critical data for Atka mackerel in the GOA, particularly reliable biomass data, the assessment authors request further guidance on the development of an alternative assessment strategy in which the combined GOA and BSAI is assessed and then partitioned into components or expanded to the Gulf of Alaska area.

Lowe, S.A., D.M. Van Doornik, and G.A. Winans. 1998. Geographic variation in genetic and growth patterns of Atka mackerel, *Pleurogrammus monopterygius* (Hexagrammidae), in the Aleutian archipelago. Fish. Bull. U.S. 96:502-515.

Lowe, S., J. Ianelli, H. Zenger, K. Aydin, and R. Lauth. 2004. Stock assessement of Aleutian Islands Atka mackerel. *In* Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Bering Sea/Aleutian Islands Regions. North Pacific Fisheries Management Council, P.O. Box 103136, Anchorage, AK.

Lowe, S. A. and R. Lauth. 2003. Assessment of Gulf of Alaska Atka mackerel. *In* Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Gulf of Alaska. North Pacific Fisheries Management Council, P.O. Box 103136, Anchorage, AK.

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